

STATE OF COLORADO

COLORADO DEPARTMENT OF HEALTH

4210 East 11th Avenue
Denver Colorado 80220
Phone (303) 320-8333



Roy Komer
Governor

Thomas M. Vernon M.D.
Executive Director

July 19, 1988

Rocky Flats Area Office
U.S. Department of Energy
P.O. Box 928
Golden, CO. 80402

RE. EPA ID. No. C07890010526
Groundwater monitoring of
interim status units.

Attn. Mr. Albert E. Whiteman, DOE Area Manager
Mr. Dominic J. Sanchini, President and General Manager,
Rockwell International

REFER TO	
_____	Area Mgr
_____	Dept Ar Mgr
_____	Counsel
_____	Ch Adm Br
_____	Ch Sec Br
_____	Ch Op Br
_____	Ch Tr Br
_____	Ch E Br
_____	Ch F Br
_____	Ch S Br
_____	Ch I Br
_____	Ch R Br
_____	Ch A Br
_____	Ch M Br
_____	Ch B Br
_____	Ch C Br
_____	Ch D Br
_____	Ch E Br
_____	Ch F Br
_____	Ch G Br
_____	Ch H Br
_____	Ch I Br
_____	Ch J Br
_____	Ch K Br
_____	Ch L Br
_____	Ch M Br
_____	Ch N Br
_____	Ch O Br
_____	Ch P Br
_____	Ch Q Br
_____	Ch R Br
_____	Ch S Br
_____	Ch T Br
_____	Ch U Br
_____	Ch V Br
_____	Ch W Br
_____	Ch X Br
_____	Ch Y Br
_____	Ch Z Br

Dear Messrs. Whiteman and Sanchini,

The Hazardous Materials and Waste Management Division of the Colorado Department of Health has evaluated the groundwater monitoring systems at the present landfill, solar evaporation ponds, and west spray field for compliance with the Colorado Hazardous Waste Regulations 6 CCR 1007-3 Part 265 Subpart F, Ground Water Monitoring Requirements. The evaluation was based on information presented in the Rocky Flats Plant annual groundwater monitoring report submitted March 31, 1988 entitled Ground-Water Monitoring at Regulated Units, and the November 1986 Revised Part B Permit Application.

A main objective of the Part 265 Subpart F regulations is to design and implement a groundwater monitoring system capable of detecting, identifying, and determining the nature and extent of hazardous waste or hazardous waste constituents released into the environment. The Division's review found that the monitoring systems at each of the above mentioned units do not adequately meet the interim status groundwater monitoring objective. The groundwater quality at the present landfill and west spray field is monitored under an alternate groundwater monitoring system and that of the solar evaporation ponds is under an assessment groundwater monitoring system as required by regulations 265.90(d) and 265.93, respectively. Deficiencies in the systems at the regulated units are serious enough to be considered violations of the Part 265 Subpart F requirements. Deficiencies that are potential violations within the monitoring systems at each of the regulated units are summarized in the enclosed attachment.

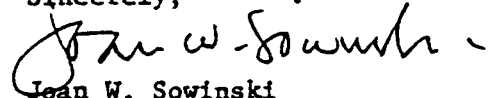
JUL 27 4 7:59

ADMIN RECORD

A-DU01-000036

The Division would like to discuss the details of the deficiencies in a meeting with you or your staff. Please contact Fred Dowsett at 331-4850 or Patricia Corbetta at 331-4843 to arrange a meeting date. I hope that you give this matter your serious consideration.

Sincerely,



Jean W. Sowinski
Section Chief,
Hazardous Waste Control Section
Hazardous Materials and
Waste Management Division

Attachment

cc: Robert Duprey, USEPA, Region VIII
Nathaniel Miullo, USEPA, Region VIII
Jefferson County Health Department
Boulder County Health Department

GROUNDWATER MONITORING SYSTEM DEFICIENCIES
OF REGULATED UNITS AT THE ROCKY FLATS PLANT

West Spray Field

Regulations 265.90(a), 265.90(d), 265.93(a) and 265.93(d)

-The groundwater monitoring system at the West Spray Field consists of five RCRA wells, containing one designated upgradient well and four designated downgradient wells. The upgradient well may contain groundwater contaminated by waste constituents from the unit as indicated by analyses of adjacent non-RCRA wells. The upgradient well does not appear to meet the requirement of being unaffected by the unit. It must be determined if the groundwater quality was affected by the unit and if so, the facility must document the rate and extent of contamination. Only one of the four downgradient wells is adequately located to collect groundwater flowing under the unit.

-The hydraulic interconnection between the Rocky Flats Alluvium and underlying Laramie Formation has not been determined. Bedrock analytical data were not reported. Consequently, groundwater quality of the uppermost aquifer has not been determined.

-Groundwater surface elevation plots were constructed for March and November yet it is not indicated that samples were collected during these months.

-The monitoring system contains two bedrock wells which is an insufficient number to construct bedrock water surface elevation plots. The bedrock groundwater flow directions around the unit and the extent of contaminant migration were not determined.

Present Landfill

Regulations 265.90(a), 265.90(d), and 265.93(a), 265.93(d)

-The groundwater monitoring program consisted of only one upgradient and three downgradient RCRA quality alluvial monitoring wells during 1986 and three quarters of 1987. Only one of the downgradient wells is located to monitor groundwater flowing under the unit, however the well is dry. Wells installed late in 1987 were not sampled or contained insufficient water for analysis during the reporting period.

-Groundwater surface elevation plots were constructed for April yet it is not indicated that samples were collected during this month.

-May 1987 groundwater monitoring data for an upgradient, non-RCRA well indicates that elevated concentrations of volatiles are present. This well is near the upgradient RCRA well indicating that groundwater in the RCRA well may be contaminated. The cause of the elevated concentrations was not determined by the facility. If the groundwater quality is impacted by the unit, then groundwater in the nearby RCRA well may also be impacted.

-The annual report refers to a downgradient well in the west spray field monitoring system as an upgradient well in the landfill monitoring system. This well cannot be designated as an upgradient well for the landfill monitoring system because it is possibly affected by the facility.

-The bedrock wells designated as background in the sampling and analysis plan penetrate a different geologic unit than what underlies the present landfill.

Solar Evaporation Ponds

Regulations 265.90(a), 265.90(d), 265.93(a) and 265 93(d)

-Three upgradient and nine downgradient wells make-up the alluvial monitoring program. The upgradient wells were either dry, not sampled, or contained contaminated groundwater. Of the nine downgradient wells, three wells were dry, one was not sampled in 1987, and five were not sampled and analyzed for the same parameters.

-Groundwater surface elevation plots were constructed for November yet it is not indicated that samples were collected during this month.

-The bedrock wells designated as background in the sampling and analysis plan penetrate a different geologic unit than that underlying the solar evaporation ponds. Downgradient contaminant concentrations in the bedrock aquifer cannot be compared to background concentrations.

Regulations 265.93(a), 265.93(b), 265.93(c), 265.93(d), and 265.93(e)

-Volatile organic concentrations were elevated in four alluvial wells and three bedrock wells in one or more quarters of sampling. The elevated concentrations were not evaluated and the plume was not delineated.

Deficiencies common to more than One Unit

West Spray Field, Present Landfill, and Solar Evaporation Ponds

Regulations 265.90(a), 265.90(d), 265.93(a) and 265.93(d)

-Groundwater surface elevation contours do not extend to all the wells in the system.

-Changes in groundwater flow directions are not explained.

Regulations 265.90(d), 265.93(d)(3)(iv) and 265.93(d)(4)

-Sampling frequency was not in accordance with the sampling plan presented in the Part B permit application and as required by regulation.

Regulations 265.90(d)(4), 265.93(d)(4), and 265.94(b)(2)

-Quarterly determinations of the rate and extent of contaminant migration and concentrations in bedrock groundwater were not determined.

-Bedrock wells were screened in different horizons and piezometers were not installed. Groundwater surface elevation plots cannot be constructed for the bedrock aquifer. The path of contaminant migration and extent of the plume cannot be determined.

Regulations 265.90(d), 265.93(a), 265.93(b), 265.93(c),
265.93(d) and 265.93(e)

-A list of specific parameters to be analyzed was not provided.

-Parameters analyzed varied between the wells.

-Statistical analyses of upgradient analytical results and downgradient analytical results were not completed for the alluvial and bedrock well data.

-Elevated concentrations of acetone and methylene chloride were reported for several wells and attributed to laboratory contamination. Samples were not reanalyzed to verify the source of contamination.

-Background concentrations in alluvial groundwater were based on results from two wells, one of which is a non-RCRA well and contained groundwater with elevated concentrations of inorganics.

-Background concentrations in bedrock groundwater were not determined.

West Spray Field and Present Landfill

Regulation 265.94(b)(2)

-The groundwater flow rate and rate and extent of contaminant migration were calculated using an average value for the hydraulic conductivity (K). Because K ranges three orders of magnitude within the facility boundaries, the calculated migration rate may not be representative of the actual rate at the regulated units.

Present Landfill and Solar Evaporation Ponds

Regulations 265.90(d)(1) and 265.93(d)(3)(iv)

-Schedules for new monitoring well installation was not provided.

Regulations 265.90(a), 265.90(d), and 265.93(a), 265.93(d)

-The uppermost aquifer is possibly misidentified. Because of the shallow depth to the Arapahoe Formation and the high hydraulic conductivity, the uppermost aquifer is considered to be the Rocky Flats Alluvium and Arapahoe Formation.